Pace Analytical Services, Inc.
315 Chestnut Street
Virginia, MN 55792
(218) 742-1042

May 11, 2016

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Dear Tom Moe:
Enclosed are the analytical results for sample(s) received by the laboratory on May 05, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
Terri Sabetti, NTS

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CERTIFICATIONS

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792
Alaska Certification #MN01084
Arizona Department of Health Certification #AZ0785
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007
Nevada DNR #MN010842015-1
Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1265480001	**WS-003 Thickner Overflow**	Water	05/05/16 08:30	05/05/16 13:00
1265480002	**WS-002 Scrubber Make-Up**	Water	05/05/16 08:40	05/05/16 13:00
1265480003	**WS-003 Thickner Overflow**	Water	05/05/16 08:30	05/05/16 13:00

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SAMPLE ANALYTE COUNT

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1265480001	**WS-003 Thickner Overflow**	EPA 300.0	DMB	2	PASI-V
1265480002	**WS-002 Scrubber Make-Up**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1265480003	**WS-003 Thickner Overflow**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Sample: WS-003 Thickner Overflow **Lab ID: 1265480001** Collected: 05/05/16 08:30 Received: 05/05/16 13:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**575**	mg/L	10.0	5.0	10		05/07/16 04:51	16887-00-6	
Fluoride	**19.4**	mg/L	1.0	0.50	10		05/07/16 04:51	16984-48-8	

Sample: WS-002 Scrubber Make-Up **Lab ID: 1265480002** Collected: 05/05/16 08:40 Received: 05/05/16 13:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**110**	mg/L	5.0	0.29	10	05/06/16 11:46	05/09/16 13:34	7440-70-2	
Magnesium, Dissolved	**209**	mg/L	5.0	0.67	10	05/06/16 11:46	05/09/16 13:34	7439-95-4	
Total Hardness, Dissolved	**1140**	mg/L	100	50.0	10	05/06/16 11:46	05/09/16 13:34		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**728**	mg/L	20.0	10.0	10		05/07/16 05:13	14808-79-8	

Sample: WS-003 Thickner Overflow **Lab ID: 1265480003** Collected: 05/05/16 08:30 Received: 05/05/16 13:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Calcium, Dissolved	**516**	mg/L	5.0	0.29	10	05/06/16 11:46	05/09/16 13:37	7440-70-2	
Magnesium, Dissolved	**278**	mg/L	5.0	0.67	10	05/06/16 11:46	05/09/16 13:37	7439-95-4	
Total Hardness, Dissolved	**2440**	mg/L	100	50.0	10	05/06/16 11:46	05/09/16 13:37		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1840**	mg/L	40.0	20.0	20		05/07/16 05:35	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

QC Batch: MPRP/6853
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 MET Dissolved
Associated Lab Samples: 1265480002, 1265480003

METHOD BLANK: 314146 Matrix: Water
Associated Lab Samples: 1265480002, 1265480003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	05/09/16 12:13	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	05/09/16 12:13	

LABORATORY CONTROL SAMPLE: 314147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	51.5	103	85-115	
Magnesium, Dissolved	mg/L	50	50.9	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 314148 314149

Parameter	Units	1265217001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	86.1	50	50	140	139	107	105	70-130	1	20	
Magnesium, Dissolved	mg/L	261	50	50	313	311	103	100	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 314150 314151

Parameter	Units	1265453002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	37.1	50	50	87.5	88.9	101	104	70-130	2	20	
Magnesium, Dissolved	mg/L	286	50	50	332	335	93	98	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

QC Batch: WETA/16671 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 1265480001, 1265480002, 1265480003

METHOD BLANK: 314338 Matrix: Water
Associated Lab Samples: 1265480001, 1265480002, 1265480003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	05/06/16 21:31	
Fluoride	mg/L	ND	0.10	0.050	05/06/16 21:31	
Sulfate	mg/L	ND	2.0	1.0	05/06/16 21:31	

LABORATORY CONTROL SAMPLE: 314339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.1	100	90-110	
Fluoride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	50	47.9	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 314340 314341

Parameter	Units	1265560001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	14.4	250	250	278	278	105	105	90-110	0	20	
Fluoride	mg/L	ND	25	25	24.6	24.6	97	97	90-110	0	20	
Sulfate	mg/L	22.5	250	250	283	283	104	104	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 314342 314343

Parameter	Units	1265432001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.0	50	50	74.0	74.0	106	106	90-110	0	20	
Fluoride	mg/L	0.41	5	5	5.4	5.4	100	100	90-110	0	20	
Sulfate	mg/L	24.0	50	50	77.3	77.3	107	107	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-LINE 3 Wk1
Pace Project No.: 1265480

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1265480002	**WS-002 Scrubber Make-Up**	EPA 200.7	MPRP/6853	EPA 200.7	ICP/5157
1265480003	**WS-003 Thickner Overflow**	EPA 200.7	MPRP/6853	EPA 200.7	ICP/5157
1265480001	**WS-003 Thickner Overflow**	EPA 300.0	WETA/16671		
1265480002	**WS-002 Scrubber Make-Up**	EPA 300.0	WETA/16671		
1265480003	**WS-003 Thickner Overflow**	EPA 300.0	WETA/16671		

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Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

WO# : 1265480

Page: 1 Of 1

PM: MMW Due Date: 05/19/16

CLIENT: USS CORP

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information
Company:	USS Corporation	Report To:	Tom Moe	Attention:
Address:	P.O. Box 417	Copy To:		Company Name:
Mountain Iron, MN 55768				Address:
Email:	tmoe@uss.com	Purchase Order #:		Pace Quote:
Phone:	(218)749-7485 Fax:	Project Name:	NPDES-LINE 3 Wk1	Pace Project Manage
Requested Due Date:		Project #:		Pace Profile #:

Regulatory Agency

State / Location

Matrix Codes: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard	Cl,F	Residual Chlorine (Y/N)	
1	WS-003 Thickener Overflow	WT		5-5-16	08:30	5-5-16	08:30														X			
2	WS-002 Scrubber Make-Up	WT		5-5-16	08:40	5-5-16	08:40												X	X				LAB FILTERED,LAB FILTERED
3	WS-003 Thickener Overflow	WT		5-5-16	08:30	5-5-16	08:30												X	X				LAB FILTERED,LAB FILTERED
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Paul Martin	5-5-16	13:00		5/5/16	1300	1.7	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Paul Martin

SIGNATURE of SAMPLER: Paul Martin DATE Signed: 5-5-16

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: USS Corp

Project #: WO# : 1265480

1265480

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other: Hexpad **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.4 **Cooler Temp Corrected °C:** 1.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C Correction Factor: +0.3 **Date and Initials of Person Examining Contents:** 5/5/16 MS

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☒ Yes	☐ No	☒ N/A 5/5/16 MS	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐ Yes	☐ No	☒ N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☒ N/A	13.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Date: 5/5/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)